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Marital Quality, Parent-Adolescent Relations, and Adolescent Depressive Symptoms Among Military Families

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MARITAL QUALITY, PARENT-ADOLESCENT RELATIONS, AND ADOLESCENT
DEPRESSIVE SYMPTOMS AMONG MILITARY FAMILIES

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ABSTRACT

Although active duty military families continue to be a strong presence in American culture, few family-level studies have been conducted that examine military family systems, processes, and outcomes for individuals who are connected to an active duty member. Using family systems theory as a guiding framework, this study utilized a multi-informant approach to explore the relationships between marital quality, parent-adolescent interactions, and adolescent depressive symptoms among a sample of military families with an active duty father. Based on the spillover hypothesis, this study expected to find that the level of marital quality reported by the active duty father and the mother would directly influence their adolescent's depressive symptoms. It was also expected that the mechanism that links parental marital quality and adolescent depressive symptoms would be the interactions that characterize the parent-adolescent relationship, specifically the warmth and hostility that the parents display in the context of the parent-adolescent relationship. Participant families ($N = 236$) were recruited from a large military installation in the continental United States using flyers throughout the installation, radio and print advertisements, and advertisements in the youth centers on the installation. Participants completed online surveys and each variable was measured using standardized scales. This study examined marital quality using both adult participants' responses to the Adapted Marital Quality Scale. To measure warmth and hostility displayed in the parent-adolescent relationship, adolescents' responses to the Interaction Behavior Questionnaire were used. Finally, the Center for Epidemiological Studies Depression Scale for Children was used to assess the adolescents' depressive symptoms. Correlations between variables were explored to inform the inclusion of control variables in the subsequent models. Then, a regression analysis was conducted and a

path model was fit to examine the relationships between the variables and how well the model fit the data.

Results of the regression analysis revealed that the direct relationship between marital quality and adolescent depressive symptoms was significant for the mother, but not the father. The path model demonstrated good model fit. Findings suggest that there was a significant relationship between the marital quality of the mother (but not the father) and the warmth she displayed in the parent-adolescent relationship. Furthermore, there was a significant relationship between the marital quality of the father and the mother and the hostility that he or she displayed in the parent-adolescent relationship. There was also a significant relationship between the warmth displayed by the mother (but not the father) in the parent-adolescent relationship and adolescent depressive symptoms. Additionally, there was a significant relationship between the hostility shown by the active duty father (but not the mother) in the parent-adolescent relationship and the depressive symptoms displayed by the adolescent. The warmth that the mother (but not the father) displayed in the mother-adolescent relationship was a significant mediator between the independent and dependent variable, marital quality and adolescent depressive symptoms. Finally, the hostility that both the father and the mother displayed in the parent-adolescent relationship was a significant mediator between the independent and dependent variables, marital quality and adolescent depressive symptoms.

Findings indicated that the marital quality of parents in military families influenced adolescent depressive symptoms indirectly through the parent-adolescent relationship. The marital quality manifested in different ways for the mother and father. Maternal marital quality influenced the warmth displayed by the mother in the parent-adolescent relationship, and

paternal marital quality influenced the hostility displayed by the father in the parent-adolescent relationship. Applications for clinicians, family life educators, and policy were discussed.

CHAPTER ONE

INTRODUCTION

Background

Relationships between family members and overall family functioning have been a focus of research for many years, and remain an important area of study today. Family dynamics became an important area of study particularly with the development of family systems theory in 1966 when researchers began to formally conceptualize the family unit as a working system of relationships that could support or hinder individual outcomes. Researchers and practitioners began to understand the members of families as parts of one whole working organism and began to investigate the relationships among family members and their effect on each member, as opposed to viewing them strictly as individuals. The interrelatedness of the family members became an important focus of study. Since then, there have been a wide range of studies examining the influences on the way the family functions. These include, but are not limited to, the relationship between birth order and family dynamics (Sulloway, 1996), adolescents' influence on family functioning (Crowter & Booth, 2003), and domestic violence and family interactions (Bancroft, Silverman, & Ritchie, 2011).

Additionally, studies have examined the association between marital quality and the parent-adolescent relationship (e.g., Kouros, Papp, Goeke-Morey, & Cummings, 2014), marital quality and adolescent outcomes, (e.g., Buehler et al. 1997; Howes & Markman, 1989; Katz & Gottman, 1995), as well as the association between the parent-adolescent relationship and adolescent outcomes (e.g., Burman, John, & Margolin, 1987), but few have examined the inter-relationships between all three variables linking marital and family-level processes to adolescent well-being.

While there are many studies that have been conducted in the wider literature on families, military families are still underrepresented. They can be considered an at-risk population because of the added stressors that are placed on them as a family unit, such as frequent relocations, deployment, job-related risk, forced separation, and ambiguous loss. The extant literature on military families tends to focus on deployment and its effect on the family unit (Allen, Rhoades, Stanley, & Markman, 2010; Asbury & Marting, 2012; Shumm, Bell, & Gade, 2000). Although deployment is a salient stressor on military families, it is only one aspect of the military family life, and there are other salient aspects or factors that influence family and individual functioning. This study was intended to help advance the collective understanding of family dynamics particularly among populations who face chronic stressors.

A major difference between military families and non-military families is the lack of consistency experienced by active duty members and their family unit. With many of these families experiencing forced separation and relocation, they tend to encounter a number of different environments, schools, social circles, and norms or rules based on where they live. This means that many military families rely on the protective factors that the family can provide, as well as positive family functioning, because the family tends to be the most constant aspect of their lives, while other variables are unknown or constantly changing (Lucier-Greer, Arnold, Mancini, Ford, & Bryant, 2015; Oshri et al., 2015). It is important to explore the family dynamics and relationships in these particular families.

Theoretical Perspective

Family Systems Theory

A broad theoretical framework that is helpful to understand family processes and functioning is the family systems theory, developed by Murray Bowen. According to family

systems theory (Bowen, 1966), individuals do not operate in isolation but, rather, are influenced by their family unit. This theoretical framework posits that family members' feelings, actions, and relationships are all interrelated and cannot be understood fully without taking the other members into account. Families formulate expectations of family members based on the patterns and roles that make up their normal functioning. If any part of the family is changed, even at the individual level, it affects the unit as a whole.

Bowen (1966) identifies eight interlocking concepts that are foundational regarding family systems theory: (1) triangles; (2) differentiation of self; (3) nuclear family emotional system; (4) family projection process; (5) multigenerational transmission process; (6) emotional cutoff; (7) sibling position; and (8) societal emotional process. More specifically, the current study applied the following concepts: triangles, nuclear family emotional system, and the family projection process. First, according to Bowen, *triangles* are the smallest relationship system that can be stable. When two people are in a disharmonious relationship, there is nowhere for the frustration to be released. Including a third person in the relationship allows the tension to be dispersed and incorporates new ideas and points of view into the relationship; it also creates a triangular relationship exchange. Second, the *nuclear family emotional system* refers to four main relationship patterns in the nuclear family that can cause upheaval or conflict, as well as promote stability and serve as protective factors. These include marital conflict, dysfunction in one spouse, impairment of one or more children, and emotional distance. These can all affect the way individuals and families manage their conflict and issues, as well as how they communicate and interact with each other. Finally, the *family projection process* refers to the way in which parents project their anxiety or discontent onto their children. This can cause negative adolescent outcomes and poor parent-adolescent relationships.

These concepts are salient when studying marital quality, parent-adolescent relationships, and adolescent outcomes because they help identify and explain important family processes, as well as ways in which these processes impact the adolescent. In the current study, the triangle that was examined included the two parents and an adolescent, where the issues or protective features experienced by the parents (the nuclear family emotional system) could influence the parent-adolescent relationship through the projection of feelings that the parents showed their adolescents.

Spillover Hypothesis

A theory that adds depth and breadth to the understanding of the influence of the parental subsystem on adolescent outcomes is the spillover hypothesis (Repetti, 1987). This hypothesis states that interactions in one setting stimulate feelings and emotions within an individual that may affect persons in other settings as actions and behaviors spillover from the initial setting. Although the hypothesis was developed to aid in the explanation of spillover effects from work to family life (Repetti, 1987), many have applied the theory to settings and interactions within the family by testing the spillover effect between the marital subsystem and the parent-adolescent subsystem (e.g., Kouros et al., 2014; Stroud, Durbin, Wilson, & Mendelson, 2011; Gerard, Krishnakumar, & Buehler, 2006). These studies widened the scope of the spillover hypothesis to demonstrate that family members' relationships and well-being can be influenced by interactions and situations within the family as well as the outside world.

Applying this perspective to studies that focus on the interrelatedness of family members allows researchers to gain a clearer picture of the dynamic influence that relationships within the group can have on the wider family unit. It can help explain why one relationship – such as the marital relationship – can impact other relationships in the family. Instead of focusing on

external forces, like the workplace or school setting, it allows families to examine internal processes that may positively or negatively impact the well-being of individual family members. As family researchers, it is important to understand the internal familial interactions, as practitioners and family members themselves have a greater likelihood of positively influencing factors within the families compared to external factors that influence the family unit. This is particularly important when considering active duty military families, as their environment can change rapidly. As noted previously, changes may include moving to a new city or country, changing schools and installations, or being in an area where the only people that the family knows are each other. In this type of situation characterized by change, the interactions within the family become even more salient, as most of their regular interactions occur within the family.

CHAPTER TWO

REVIEW OF LITERATURE

Existing Literature

The purpose of this study was to integrate family systems and spillover theory and apply these principles to the study of parental marital quality, parent-adolescent relationship functioning, and adolescent well-being, specifically depressive symptoms. Within the last ten years, there has been extensive growth in the research on family functioning, specifically in the area of marital quality and its relationship to parenting and adolescent outcomes. Although many studies suggest that these factors have some relation to one another, these are very complex constructs, so there are uncertainties regarding which components of marital quality, parenting, and adolescent outcomes to focus on, as well as which variables are the most fitting to represent these constructs. While there may not be a consistent measure for each of these constructs across the literature, it is important to understand how they interact with each other, both directly and indirectly, in order to understand family functioning.

One's role within a family provides a certain vantage point or perspective on family dynamics, and within this area of investigation, the primary reporter varied across studies. While many studies utilized the adolescent as the sole reporter, others used one or both parents, and a few used both the adolescent and the parents as informants to describe the family system. It is imperative to decipher whether findings are consistent based on which person was reporting family and individual-levels factors. When conducting research in this area and investigating these constructs, it is important to be reminded that each study will use the reporter, variables, and measure that best fits the aims of the report and the relationships that the study is

investigating. Although there may be many different ways to understand these constructs, each study that allows us a deeper understanding of them is valuable to the family studies field.

This study investigated the interaction between the marital relationship, parent-adolescent relationship (through the variables of warmth and hostility), and adolescent depressive symptoms. I utilized multiple reporters in order to create a more complete picture of the relationships I was investigating. This study will enhance the existing literature on military families because I examined these variables while incorporating the spillover hypothesis to shed light on the influence different relationships within the family system may have on each other. This is particularly important for military families because of how salient the family relationship is given the normative and non-normative stressors that they experience.

Marital Quality and Adolescent Outcomes

There is a general consensus within the literature that a link exists between marital quality and adolescent outcomes. However, because marital quality is a complex measure that incorporates dimensions such as conflict, warmth, values, and quality, there is no common measure for the marital relationship and many studies address different aspects of this relationship. Although this is not inherently an issue, it can be difficult to draw parallels between studies that focus on different aspects of marital quality.

There are many facets to the marital relationship, and the available literature has not come to an agreement on which aspect of the marital relationship to focus on as most salient in predicting adolescent outcomes. A reason for this could be that different aspects of the relationship are more important to different adolescent outcomes and, as stated earlier, there are many different variables involved in these constructs. It is difficult to have a widely accepted definition of the marital relationship or adolescent outcomes, so it is important for researchers to

be specific and clear about which aspects of these constructs they are addressing. This allows future researchers to draw parallels and replicate their studies to create deeper understanding. Some studies (Fishman & Meyers, 2000; Shek, 2000) have focused on the overall marital quality of the individual parent, measuring the quality of both parents separately. These studies found that the influence that parents had on their children's outcomes varied depending on the variable studied and the culture in which the data were collected. For instance, Shek (2000) found that the father had a greater influence on the child, where Fishman and Meyers (2000) found that the mother had a greater influence.

Other studies (Bradford, Vaughn, & Barber 2008; Cui & Conger, 2008; Doyle & Markiewicz, 2005; Gerard et al., 2006; Kaczynski, Lindahl, & Malik, 2006; Low & Stocker, 2005) focused strictly on the conflict or hostility shown in the marital relationship. These studies examined the reports of marital conflict for mothers and fathers individually, focusing on how each parent's level of conflict in his or her marriage was represented independent of the other spouse's levels. Again, the results of the studies seem to point to the idea that variables, culture, and population are the biggest influence on the results. The studies all found a significant relationship between the negative parental actions and the child outcomes or parent-child relationship. The strength of the relationship, and which parent contributed most, varied depending on the aspect of the marital relationship studied.

Still other researchers (Du Rocher Schudlich & Cummings, 2007; Low & Stocker, 2005; Schoppe-Sullivan et al., 2007) focused on marital conflict or hostility with both the couple as the unit of analysis. These studies combined the marital conflict variable in order to have one combined result for both parents. These studies also found that there was a significant relationship between conflict within the parental unit and the adolescent outcomes. From a

family systems perspective, this may be a beneficial approach because it accounts for the perspective of multiple members of the family unit in one measure. The perspective states that doing this would be more representative of the phenomenon being studied.

Another area in the literature that has been conceptualized and studied many different ways throughout the literature is adolescent outcomes. The outcomes that are most regularly examined in the extant literature are internalizing and externalizing factors. Many studies (Cui & Conger, 2008; Doyle & Markiewicz, 2005; Gerard et al., 2006; Kaczynski et al., 2006; Low & Stocker, 2005; Schoppe-Sullivan et al., 2007) have taken individual adolescent outcomes and combined them to make an overarching “internalizing/externalizing symptoms” variable. Although significant relationships were found in each of these studies between marital quality and adolescent mental health, the label of internalizing and externalizing factors is quite broad. It can be beneficial to look at specific internalizing and externalizing behaviors because the way in which the variables that comprise these behaviors are displayed can vary based on age, gender, and a number of other factors. Understanding specific behaviors can help to give a clear picture of exactly how these outcomes are being displayed.

Studies that have investigated specific behaviors or symptoms discovered that higher levels of marital quality were significantly related to higher levels of life satisfaction (Shek, 2000), self-esteem (Doyle & Markiewicz, 2005; Shek, 2000), and adolescent adjustment (Doyle & Markiewicz, 2005; Du Rocher Schudlich & Cummings, 2007), as well as lower levels of adolescent distress (Fishman & Meyers, 2000) and depression (Bradford et al., 2008). This demonstrated that there are many adolescent outcomes that can be affected by marital quality and allows researchers to understand which factors are affected most in a variety of populations.

Finally, research designs vary regarding who is used as the reporter for adolescent outcomes. Some studies (Fishman & Meyers, 2000; Gerard et al., 2006) used parental reports to measure their adolescent's outcomes. The potential drawback to this approach is that the adolescent does not report on his or her own outcomes. Although this approach can be useful if the researcher is only using parental participants and wants to measure adolescent outcomes, this can be problematic because the parents may not be as perceptive to the adolescent's outcomes as the adolescent themselves would be.

Other studies (Bradford et al., 2008; Doyle & Markiewicz, 2005; Shek, 2000) focused exclusively on the perspective of the child. While this approach addresses the concern with the parents being the sole reporter mentioned above, it allows answers to possibly be affected by reporter bias. The remaining studies (e.g., Cui & Conger, 2008; Kaczynski et al., 2006; Du Rocher Schudlich & Cummings, 2007; Low & Stocker, 2005; Schoppe-Sullivan et al., 2007) utilized both parents and the adolescent as reporters. This approach has the advantage of gaining insight from all individuals in the family. Each member responds to questions about the adolescent's outcomes, and the researcher can understand the perspectives of both the adolescent and the parents. This allows for a more comprehensive picture of the nature of the adolescent's outcomes.

All of the above studies found a significant relationship between the variables they investigated. Understanding these results is important because it provides evidence that choosing the appropriate reporter for the variables of interest is important to enhance the validity and depth of a study, but across all reporters and all variables investigated above, there is an agreement that there is a relationship between marital quality and adolescent outcomes such that higher levels of marital quality are associated with higher positive, and lower negative,

adolescent outcomes. This seems to be a trend across populations. The next step is then to understand how this relationship manifests within an at-risk sample.

Marital Quality and the Parent-Adolescent Relationship

Following the section above, there is also a general consensus among the literature that a relationship exists between marital quality and the parent-adolescent relationship, but important nuances exist pertaining to who is used to report on the relationship as well as which parent is more influential on the adolescent. For instance, some studies (Fishman & Meyers, 2000; Gerard et al., 2006) focused solely on the parental reports of marital quality. Both studies found that marital quality was positively related to the parent-adolescent relationship. The advantage to this method is that the researchers can understand the marital relationship from both the mothers' and the fathers' perspectives. It can give a more complete picture of what is happening in the relationship. Other studies (Bradford et al., 2008; Doyle & Markiewicz, 2005; Shek, 2000) measured the marital quality from the reports of the adolescents. Although these studies produced similar results to the studies that utilized the parental reports, this approach can allow room for error in the reporting of the marital relationship. The adolescent may not have full understanding of what happens in his or her parents' relationship, so the results may not be completely accurate. While the potential limitation for an incomplete picture exists with the adolescent reporters, the studies mentioned above provide evidence that there is a general consensus among researchers that there is a relationship, regardless of the reporter used.

Similarly, there are many studies that have utilized solely the adolescent as the reporter for the parent-adolescent relationship measure. For instance, Bradford and colleagues (2008) and Doyle and Markiewicz (2005) collected reports from adolescents about their perceptions of their relationships with their parents. In both of these cases, the results provided evidence that marital

conflict was inversely related to the parent-adolescent relationship. Additionally, Kouros and colleagues (2014), Low and Stocker (2005), and Shek (2000) drew conclusions from adolescents' reports of their relationship with their parents. Kouros and colleagues (2014) reported that marital quality was significantly related to the quality of the parent-adolescent relationship for both mothers and fathers. Similarly, Low and Stocker (2005; who also utilized observations from coders to create their parent-adolescent relationship score) found that marital hostility positively related to the level of hostility in the parent-adolescent relationship for both parents and their adolescent.

Other studies have elicited responses about the nature of the parent-adolescent relationship from the parents (Fishman & Meyers, 2000; Gerard et al., 2006) or the parents and adolescents (Cui & Conger, 2008; Fauchier & Margolin, 2004; Schoppe-Sullivan, Schermerhorn, & Cummings, 2007). Studies such as Cui and Conger (2008) and Gerard and colleagues (2006) combined the parent-adolescent relationship measure like some studies mentioned above, and they both found that marital distress and conflict were significantly related to both positive and negative parenting practices. The only area of parenting that was not affected by marital conflict in Gerard et al. (2006) was the level of parental involvement in their adolescents' lives. Additionally, Fauchier and Margolin (2004) and Schoppe-Sullivan and colleagues (2007) found that marital quality is positively related to positive parenting, warmth, and affection for both parents.

Many studies have found that the one parent has a stronger influence on the adolescent than the other parent, although results do not definitively agree that it favors one parent over the other. For instance, Fauchier and Margolin (2004) reported that marital conflict was related to the conflict felt in the mother-adolescent relationship, but not in the father-adolescent

relationship. Additionally, Fishman and Meyers (2000) reported that there was a relationship between marital quality and maternal involvement, such that higher levels of marital quality, was associated with higher levels of maternal involvement, but the relationship was not significant for fathers.

In contrast, Shek (2000) found that, while the relationship between marital quality and parent-adolescent relationship quality was significant for fathers and their adolescents, it was not significant for mothers and their adolescents. However, one reason that this study revealed different results could be that this study was conducted using 378 Chinese families, while the other studies were conducted using a predominantly Caucasian, European American family samples. The parent-adolescent relationship dynamics may be markedly different across cultures.

The Parent-Adolescent Relationship and Adolescent Outcomes

The relationship between parents and adolescents has been shown in studies to be salient for adolescent outcomes. Although the overall results tend to be consistent – that the parent-adolescent relationship has some effect on the adolescent outcomes – there are still a number of approaches that can be taken when measuring these variables.

It is important to understand that the parent-adolescent relationship has been measured a number of ways in the existing literature. A large number of studies (Cui & Conger, 2008; Du Rocher Schudlich & Cummings, 2007; Kaczynski et al., 2006; Shek, 2000) have focused on the parent-adolescent relationship or parenting as a whole. Although this can capture the essence of parenting, it can be a risk, as these broad measures lack specificity which may make it more difficult to identify points of intervention. For instance, a parent may be very involved and loving with their adolescent, but they may also be short-tempered and hostile. Combining those variables into a parenting variable has the potential to mask critical aspects of the relationship.

Some studies have shown that more negative aspects of the parent-adolescent relationship such as hostility or conflict (Bradford et al., 2008; Low & Stocker, 2005) and control (Doyle & Markiewicz, 2005) have a significant relationship with adolescent outcomes, such that higher levels of hostility, conflict, or control are associated with lower levels of positive adolescent outcomes. Other studies focused solely on those positive traits like warmth (Schoppe-Sullivan et al., 2007) and involvement (Fishman & Meyers, 2000), showing that higher levels of these traits were associated with higher levels of positive adolescent outcomes. On the same note, only measuring one type of parental interaction (negative or positive) may not be sufficient to fully assess and capture the parent-adolescent relationship. This is why a combined approach like Gerard et al. (2006), which focused on positive aspects of the parent-adolescent relationship like involvement and negative aspects like harsh discipline, allows for a more complete understanding of the relationship.

It is important to note that, while this approach may allow for a big-picture understanding, some researchers are solely interested in specific variables such as those mentioned above. There is not a "correct" way to measure this variable, and the approach researchers take will ideally be in line with the aims and goals of their study. It is simply important to be aware of when conducting future research that the parent-adolescent relationship variable may have been conceptualized in a different way depending on the study.

Study Variables

Parental marital quality. Due to the complex nature of the variable, parental marital quality has been conceptualized using a number of different variables and scales. Many of the scales use the presence or absence of conflict as the basis for marital quality. A popular scale measuring parental marital conflict is the O’Leary-Porter Scale (Porter & O’Leary, 1980), a

questionnaire containing 10 items that measure the amount of conflict that occurs in the presence of an adolescent. Many studies that have chosen to utilize this scale (e.g., Kaczynski et al., 2005; Schoppe-Sullivan et al., 2007) have included responses from both parents in order to provide as complete a picture as possible.

Another well-used parental marital quality scale (Doyle & Markiewicz, 2005; Fauchier & Margolin, 2004; Kaczynski et al., 2006) is the Children's Perception of Interparental Conflict Scale (CPIC; Grych, Seid, & Fincham, 1992). This questionnaire asks adolescents to report their perceptions of parental marital conflict across many dimensions. This can include the frequency of conflict, the length of time for their parents to reach a resolution, and the intensity of the conflicts.

Finally, some studies have stepped away from looking solely at conflict and conflict resolution to measure parental marital quality in a more holistic way. These studies have used scales such as the Positive and Negative Quality in Marriage Scale (Fincham & Linfield, 1997) for parental reporters (Schoppe-Sullivan et al., 2007) and the Child's View (Margolin, 2000) for adolescent reporters (Fauchier & Margolin, 2004). These scales measure the positive and negative aspects of the parental marital relationship instead of focusing strictly on the parents' level of conflict. The current study utilized the Adapted Marital Quality Scale (MQS; Bowen & Orthner, 1983), a reliable, empirically validated measure that examines marital quality with a broad lens in order to understand the variable in a holistic way. This study also incorporated reports from both the active duty father and the mother.

Parent-adolescent relationship. Similar to marital quality, researchers can examine the parent-adolescent relationship with diverse instruments. Reports can be taken by adolescents, parents, or both in order to provide a full picture of family perceptions. Due to the dynamic

nature of the parent-adolescent relationship, there is not a universally accepted way to understand this variable. Steinberg (2001) brought awareness to this difference of reporters in studies, and encouraged researchers and readers to understand the viewpoint of the reporter and take that into account when interpreting results.

Some recent studies have utilized observations of interactions between parents and adolescents in order to understand the warmth, hostility, supportiveness, and coercion that parents display towards their adolescents (Kaczynski et al., 2006; Low & Stocker, 2005). In addition to observations, a common scale used to measure parenting in recent literature (Kouros et al., 2014; Schoppe-Sullivan et al., 2007) is the Parenting Style Index (Lamborn, Mounts, Steinber, & Dornbusch, 1991) in which adolescents respond to multiple items about their relationship with their parents including their parents' involvement, strictness, warmth, and supervision styles. The current study was interested in the adolescent's view of the parent-adolescent relationship and used the Interaction Behavior Questionnaire (IBQ), also known as the Conflict Behavior Questionnaire (CBQ; Prinz, Foster, Kent, & O'Leary, 1979), which measures adolescent reports of the warmth and hostility, assessed as separate dimensions, displayed by each parent.

Adolescent outcomes. Adolescent health and well-being is another complex area of assessment. Recent studies have chosen to focus on factors such as depression, anxiety, grades, peer relationships, attachment styles, and many other manifestations of child well-being and happiness. A measure that stands out in the literature that incorporates many child outcomes is the Child Behavior Checklist (CBCL; Achenbach, 1991). This is an in-depth questionnaire that asks parents (Du Rocher Schudlich & Cummings, 2007; Kaczynski et al., 2006; Low & Stocker, 2005; Schoppe-Sullivan et al., 2007) or children (Bradford et al., 2008) to report on children's

internalizing and externalizing behaviors such as withdrawing, lashing out, delinquent behavior, and anxiety. While that measure is reliable and useful for measuring many outcomes, the current study is focused on child depressive symptoms. It is recognized that depression is one part of adolescents' internalizing and externalizing behaviors, but it is important for researchers to understand the influences on child depressive symptoms because there has been a focus in academic and mainstream outlets on a depression “epidemic” among children and adolescents in the last fifteen years (Costello, Erkanli, & Angold, 2006). Depression levels have continued to increase among children and adolescents (Kessler, Avenevoli, & Merikangas, 2001), and there is much still left to be understood about the contributing factors regarding depressive symptoms. This study used the Center for Epidemiological Studies Depression Scale for Children (CES-DC; Faulstich, Carey, Ruggiero, Enyart, & Gresham, 1986; Weissman, Orvaschel, & Padian, 1980), a self-reported measure for adolescent depressive symptoms, to understand the relationships between the marital relationship, parent-child relationship, and child depressive symptoms.

Control variables. According to the existing literature, there are some potentially confounding variables that have been linked to the variables of interest in the current study, such as the gender of the adolescent, parental rank, family structure, and adolescent age. First, adolescent gender has been found to be influential when examining adolescent depressive symptoms (Cyranowski, Frank, Young, & Shear, 2000; Piccinelli & Wilkinson, 2000), with studies providing evidence that depressive symptoms are more prevalent in adolescent women than men.

Additionally, although there has been a lack of research on military families, there have been a small number of studies that have investigated the influence of rank on the familial relationships. One study provided evidence that the rank of the active duty spouse has an

influence on the marital relationship (Segal, 1986). That study focused on the influence of forced separation and relocation on military marriages and families, and found that rank can impact those relationships because the enlisted families are less likely to have the resources, education, and coping mechanisms that officers and their families possess when dealing with such hardships. Another study that focused on military deployment and its effects on children discovered that military rank was not significantly related to the child outcomes (Flake, Davis, Johnson, & Middleton, 2009). Due to the uncertainty of this variable, the current study tested the significance with this particular population to possibly include it in the control variables.

Many studies have investigated family structure and its effects on family functioning. One study found that children in stepfamilies had less desirable outcomes due to lack of encouragement and time spent with the parent and stepparent (Astone & McLanahan, 1991). Another study indicated that the child and family outcomes had less to do with the structure of the family and more to do with the processes that the family employed when interacting with each other (Lansford, Ceballo, Abbey, & Stewart, 2001); these findings were replicated within a sample of military families (Arnold, Lucier-Greer, Mancini, Ford, & Wickrama, 2015). Due to the importance of the family unit and the relationship with the at-home caretaker and the adolescent in military families, it was of interest to the current study to decipher whether the at-home caretaker's (in this case, the mother's) biological relationship with the adolescent had an influence on the familial relationships.

Finally, research has discovered that adolescents' relationships with their parents change as the adolescent matures and gets older. Factors included in this relationship are time spent with parents (Larson, Richards, Moneta, Holmbeck, & Duckett, 1996), information disclosed to parents versus peers, (Papini, Farmer, Clark, Micka, & Barnett, 1990; Smetana, Metzger,

Gettman, Campione-Barr, 2006), and perceived support from parents (Furman & Buhrmester, 2008). These studies all found that age was a strong indicator of the perceived relationship between the adolescents and their parents, such that as the adolescent increased in age they felt more supported, spent more time with, and disclosed more to their parents. Due to this study investigating the adolescent perception of the warmth and hostility displayed by the parent in the parent-adolescent relationship, age of the adolescent was considered.

Military Family Research

The majority of military literature, to date, has centered on variables that are distinct to military members and their families. These include stressors such as deployment (Cozza, Chun, & Polo, 2005), relocation (Finkel, Kelley, & Ashby, 2003), and forced separation (Drummet, Coleman, & Cable, 2003). A small number of studies have investigated marital quality and satisfaction in military families, and it has been within the context of deployment and combat experience (Gimbel & Booth, 1994; Schumm, Bell, & Gade, 2000). While Gimbel and Booth (1994) discovered that combat experiences lowered the marital satisfaction and functioning for the military families in their study, Schumm and colleagues (2000) discovered that the lower satisfaction only persisted through deployment, and did not have any lasting effects on families.

In the context of the parent-adolescent relationship and adolescent outcomes in military families, the research again revolves around relocation and deployment. One study (Palmer, 2008) found that adolescent outcomes were influenced more heavily by the stress that the military parent feels and displays towards their adolescent, than by the title of being a “military family”. Additionally, Huebner, Mancini, Wilcox, Grass, and Grass (2007) found that deployment and forced separation had a significant influence on adolescents because they had to cope with issues that may have been beyond their developmental capacity, such as ambiguous

loss and additional household responsibilities. This indicated that the parent-adolescent relationship can be very salient for military families.

One study (Lagrone, 1978) reviewed the differences in adolescent outcomes in a military clinic and a civilian mental health facility to understand the influence that military life has on adolescents and found that there was a higher number of behavioral incidents in the military clinic than in the civilian mental health facility. The author attributed the behavior problems to the added stress and rigidity of being associated with the military lifestyle. Another study (Saltzman et al., 2011) reviewed the implementation of Families Over Coming Under Stress (FOCUS), a military-only initiative, to understand its effectiveness on enhancing resilience in families with military ties. The study outlined risk mechanisms for military families that included incomplete understanding of deployment, impaired family communication, impaired parenting, impaired family organization, and lack of guiding belief systems. The researchers then outlined how FOCUS has helped to address and improve these issues with military families and has been successfully implemented to thousands of military families since 2008.

Although research investigating the constructs and variables specific to military families is important, focusing strictly on variables that differentiate them from civilian families can be problematic. At the root of a military family, there are still people relating and working together as a unit. They may experience non-normative stressors that involve being in the military (like deployment, forced separation, and relocation), but it is important to understand that being a part of the military is one aspect, however salient, of their life and family functioning. The current study examined variables that are central to family functioning for military and civilian families. It viewed the military family in the context of every day functioning, and examined how the marital relationship, parent-adolescent relationship, and adolescent depressive symptoms

manifest in military families, as opposed to examining the variables that differentiate military and civilian families.

Current Study

The current study applied family systems theory to examine the relationship between marital quality and adolescent depressive symptoms in active duty military families. It was investigated through the mediating influences of warmth and hostility displayed in each of the parent-adolescent relationships. Although this was not a longitudinal study, the spillover hypothesis was also applied as the theoretical lens through which the results were interpreted. This study focuses on reports from the active duty fathers, their partners, and adolescent children within the home. The marital quality measure was assessed from the perspective of both adult reports, while the parent-adolescent relationship measures and adolescent depressive symptoms were derived from adolescent reports.

There are several research questions that this study addressed to examine military family dynamics and adolescent depressive symptomology.

Research Question 1 (RQ1): Is there a direct, significant relationship between parental marital quality and the depressive symptoms displayed by the adolescent?

Research Question 2 (RQ2): Is there a significant relationship between parental marital quality and the warmth or hostility shown by the parent to his or her adolescent?

Research Question 3 (RQ3): Is there a significant relationship between the warmth or hostility shown by the parent to his or her adolescent and adolescent depressive symptoms?

Research Question 4 (RQ4): Is parental marital quality significantly related to adolescent depressive symptoms indirectly through the warmth or hostility demonstrated by each parent to his or her adolescent?

In order to answer these research questions, seven hypotheses were evaluated. Hypothesis one was evaluated via a regression model. Hypotheses two through seven were evaluated within the context of the path model, controlling for all other variables in the model.

Hypothesis 1 (H1): Marital quality of both parents will be directly related to adolescent depressive symptoms, such that higher levels of marital quality will be related to lower levels of adolescent depressive symptoms.

Hypothesis 2 (H2): Marital quality will be related to the warmth displayed in both the father-adolescent and the mother-adolescent relationship, such that higher levels of marital quality will be related to higher levels of warmth shown by the parent to his or her adolescent.

Hypothesis 3 (H3): Marital quality will be related to the hostility displayed in both the father-adolescent and the mother-adolescent relationship, such that higher levels of marital quality will be related to lower levels of hostility shown by the parent to his or her adolescent.

Hypothesis 4 (H4): The level of warmth displayed in the father-adolescent relationship, as well as the mother-adolescent relationship, will be related to the depressive symptoms of the adolescent, such that higher levels of warmth shown by the parent to the adolescent will be related to lower levels of adolescent depressive symptoms.

Hypothesis 5 (H5): The level of hostility displayed in the father-adolescent relationship, as well as the mother-adolescent relationship, will be related to the depressive symptoms of the adolescent, such that higher levels of hostility shown by the parent to the adolescent will be related to higher levels of adolescent depressive symptoms.

Hypothesis 6 (H6): Marital quality of both parents will be related to adolescent depressive symptoms indirectly through the level of warmth displayed in the parent-adolescent relationship.

Hypothesis 7 (H7): Marital quality of both parents will be related to adolescent depressive symptoms indirectly through the level of hostility displayed in the parent-adolescent relationship.

CHAPTER THREE

METHOD

Participants

This study was a secondary data analysis using data collected by the Family and Community Resilience Laboratory at the University of Georgia (see Lucier-Greer et al., 2014 for more detail). Data were collected in 2013 as part of a study on military life focusing on family dynamics and processes as well as community involvement and support programs for military families. This dataset includes 273 families ($N = 909$ individuals; $n = 437$ male). When data were originally collected, inclusion criteria required there to be at least one active duty member in the household ($n = 273$). Volunteer families were recruited from a large Army installation in the continental United States. Participant families ranged in size from two to four family members, where at least one active duty member and one adolescent participated. Participant families could have included an active duty member, a spouse or significant other ($n = 243$ partners), and up to two adolescents ($n = 391$ adolescents; 157 families had one adolescent participant and 117 families had two adolescent participants). Participant families included both single-parent ($n = 25$) and dual-parent ($n = 248$) headed families.

Given the hypotheses in the current study, inclusion criteria mandated that participant families are two-parent families for which there were data from both adults. Most of the parental participants were married (91.1%; $n = 227$ couples). Relationship length ranged from six months to 25.42 years ($M = 12.64$; $SD = 5.691$). Additionally, this study only included those families in which the active duty member was the father because there was a limited number of participant families with female active duty members ($n = 7$). This allowed me to increase the homogeneity

of the sample and minimize the chance for potential confounding variables that could influence my results. Therefore, the sample for the current study is included 236 families.

Adolescent participants ranged in age from 11 to 18 years old. If the family had more than two adolescents between the ages of 11 and 18, it was left to the family to decide which adolescents participated in the original study. Given the goals of the current study, if there were two adolescent participants in one family, only data from the oldest adolescent were used. It has been demonstrated that older siblings have a direct influence on younger siblings and how younger siblings develop, understand emotions, express themselves, and complete tasks (Brody, 2004; Klein, Feldman, & Zarur, 2002; Tucker, Updegraff, McHale, & Crouter, 1999). It has also been demonstrated that older siblings indirectly affect younger siblings through the differential treatment that some younger siblings receive from parents (Brody, 2004). For these reasons, it was thought that the parental relationship would have a more direct influence on older siblings as opposed to younger siblings, therefore examining data from the oldest adolescent reporter may better reflect spillover processes from the parental subsystem to adolescent outcomes.

Procedure

Prior to the start of the original study, research approvals were obtained from an Institutional Review Board for Human Subjects (IRB) and the Army Research Institute. For the current study, a Human Subject application was approved by Florida State University's IRB (IRB00000446) to perform secondary data. For a copy of the IRB approval form, please see Appendix A.

Informational flyers developed by the research team were used to advertise the study on the installation. Radio and print advertising, as well as advertisements in the youth centers, were also used to recruit participants. Participation in the study was voluntary and participant families

received modest compensation for their time. Consent was received from all participants. If the participant was under the age of 18, the adolescent provided assent and the parent also provided consent for the adolescent. All family members completed the survey at the same time in a computer lab at one of the youth centers on the installation. There were trained researchers as well as individuals who were familiar with the families available to answer questions the participants may have had. To ensure confidentiality, the participants were assigned a code number that connected individuals to their family. All personal data were stored in a separate database. The survey took between 45 and 60 minutes to complete, and each participant completed the survey separately and alone to ensure independent answers. The survey tapped into many dimensions, including demographic information, physical and emotional health, relationship quality (both marital and parent-adolescent relationship), community involvement, program participation, and the support available to families. For this study, I was interested in the survey items pertaining to marital quality, the parent-adolescent relationship, and adolescent depressive symptoms. Each of the measures for the current study are described in detail below.

Measures

Demographic Information

Demographic data were collected on a range of individual and family level variables. In order to reduce the risk of confounding variables in this study, control variables were selected from the available demographic variables. I selected variables that could potentially influence the findings based on the extant literature and then investigated whether these variables were significantly associated with study variables. More specifically, I examined the influence of the following variables based on correlational analyses: adolescent gender, active duty father's rank, mother-child biological relationship, and adolescent age. Each variable was dichotomously

coded: gender (0 = Male, 1 = Female adolescent), rank (0 = Enlisted parent, 1 = Officer parent), mother-child biological relationship (0 = non-biological mother, 1 = biological mother), and age (0 = 11 to 14 years old, 1 = 15 to 18 years old). Those with a significant relationship to the variables of interest were included in the model in order to control for confounding variables and increase internal validity. For more information, see Appendix B.

Marital Quality

The independent variable for this study was the perceived quality that each parent feels regarding his or her marriage. This study measured marital quality using the Adapted Marital Quality Scale (MQS; Bowen & Orthner, 1983). Responses were recorded from both parents participating in the study. The Adapted MQS has been used in existing military research as a measure for marital quality (Bowen & Orthner, 1983; Pittman, Kerpelman, & McFadyen, 2004). The scale asked participants to rate the quality of their relationship using six items. These items are trust, spiritual values, communication, mutual support, faithfulness, and capability to handle conflict. Participants responded on a 4-point scale ranging from 1 (Very Negative) to 4 (Very Positive). Responses from each item were averaged to create a mean score for each participant. A higher score on the scale indicates a higher level of marital quality a participant feels. Reliability estimates of the original scale ($\alpha = .91$; Bowen & Orthner, 1983) were similar to the estimates of the current study ($\alpha = .862$ for active duty father and $\alpha = .886$ for mother).

Parent-Adolescent Relationship

The mediator for this study was the parent-adolescent relationship, specifically the adolescent's report of warmth and hostility with each parent. The Interaction Behavior Questionnaire (IBQ), also known as the Conflict Behavior Questionnaire (CBQ; Prinz, Foster, Kent, & O'Leary, 1979), was used. Within the questionnaire, there are two subscales – warmth

(10 items) and hostility (10 items). Sample items used to measure warmth included “(Insert parent’s name) understands you. He or she knows where you are coming from,” “You think (insert parent’s name) and you get along very well,” and “You enjoy the talks (insert parent’s name) and you have.” Sample items used to measure hostility included “(Insert parent’s name) says you have no consideration or respect for him/her,” “(Insert parent’s name) screams a lot,” and “(Insert parent’s name) puts you down or says bad things about you.” The questionnaire aims to measure the adolescent’s perception of his or her relationship with each parent.

Participants answered 1 (True) or 0 (False) for each question asked. Each response was summed to create an index for warmth and hostility. Depending on the subscale being measured, a higher sum score indicates a higher level of warmth or hostility an adolescent feels in his or her relationship with each parent. Previous internal consistency tests indicated high scale reliability ($\alpha = .90$; Prinz et al., 1979). The internal consistency was also sufficient for the present study ($\alpha = .857$ for the active duty father warmth subscale; $\alpha = .856$ for the active duty father hostility subscale; $\alpha = .854$ for the mother warmth subscale; $\alpha = .822$ for the mother hostility subscale).

Adolescent Depressive Symptoms

The dependent variable for this study was the level of depressive symptoms self-reported by the adolescent. It was measured using the Center for Epidemiological Studies Depression Scale for Children (CES-DC; Faulstich, Carey, Ruggiero, Enyart, & Gresham, 1986; Weissman, Orvaschel, & Padian, 1980) in which adolescent participants were asked to rate their feelings and actions during the past week. It includes 20 items that use a 4-point scale, ranging from 1 (Not At All) to 4 (A Lot). Examples of items on the scale include “I was bothered by things that usually don’t bother me,” “I had a good time,” and “I was more quiet than usual.” The questions that elicit more positive responses were reversed scored. Responses from each item were averaged to

create a mean score for each participant. A higher score on the scale indicates a higher level of depressive symptoms a participant displays. In an evaluation of the CES-DC, it was found to have adequate internal consistency ($\alpha = .84$; Faulstich, et al., 1986). This was similar to the internal consistency for the present study ($\alpha = .913$).

Analytic Plan

First, a correlation analysis was run using IBM SPSS to investigate the significance of the relationships between the variables. The variables included: the marital quality of the active duty father according to the MQS, the marital quality of the mother according to the MQS, the adolescents' report of warmth displayed by the active duty father based on the IBQ, the adolescents' report of warmth displayed by the mother based on the IBQ, the adolescents' report of hostility displayed by the active duty father based on the IBQ, the adolescents' report of hostility displayed by the mother based on the IBQ, and the adolescent depressive symptoms based on the CES-DC. Correlation analyses were used to examine the strength of the relationships among the variables and identify salient control variables. The analyses also provided an initial opportunity to evaluate potential issues of multicollinearity (Silvey, 1969). Multicollinearity is a phenomenon in which multiple predictor variables can be linearly predicted from one another, meaning that they are highly correlated (Farrar & Glauber, 1967). The presence of multicollinearity can alter results of a study because relationships between predictors and outcomes can appear to be significant when, in reality, two predictors are measuring two aspects of the same variable.

In order to rule out the existence of multicollinearity, and therefore have confidence that the chosen predictor variables were not too highly correlated with each other, I investigated the variance inflation factor (VIF) for predictor variables with correlations greater than .40. The VIF

is suggested for use because it provides data regarding the portions of the variables that are interrelated and influencing each other. There is not a collective agreement on an acceptable cutoff point for the VIF to rule out multicollinearity. Past suggestions call for a VIF of less than 5 or even 10, but it is argued that those guidelines are too lenient and a cutoff of less than 2 is more acceptable (Craney & Surles, 2002).

Next, descriptive statistics were examined to explore the distribution of study variables and examine patterns of missing data. For most measures in this study, missing data was minimal, ranging from 0% to 1.7%. However, for the measures of warmth and hostility in the parent-adolescent relationship, the variables addressing the mother-adolescent relationship had a larger amount missing data (11.8%; $n = 27$). Little's Missing Completely at Random test was non-significant ($\chi^2 = 5.59$, $df = 1$, $p = .061$) indicating that the patterns of missingness on these variables were large, but notably random.

To begin the analyses, a multiple regression analysis was conducted in SPSS. I regressed the adolescent depressive symptoms on the reported marital quality of the active duty father and the reported marital quality of the mother to examine the predictive nature of parental marital quality on adolescent mental health.

Next, a path analysis was conducted using AMOS to investigate the direct and indirect relationships between the marital relationship (the reported marital quality of the active duty father and marital quality of the mother) and the adolescents' depressive symptoms. Parental warmth and hostility served as the mediator variables in the model. See the conceptual model in Appendix C. To account for missing data, Full Information Maximum Likelihood (FIML) estimation was used. FIML is a way to account for missing data without having to manually impute answers to questions in which the participants did not respond. It uses information of the

observed data, incorporating answers from other questions that the participants responded to, in order to input the best answer to match the pattern of the other results (Wothke, 2000). As stated, FIML was used to account for missing values.

Several fit indices were used, including the chi-squared test, chi-squared and degrees of freedom (χ^2/df) ratio, comparative fit index (CFI), and root mean square error of approximation (RMSEA). The chi-squared test was used to test the fit of the model to the data by examining the difference between what was observed and what was measured in the model; a non-significant value indicates no significant difference between the expected and observed results. Furthermore, a smaller χ^2/df ratio indicated a better match between the model and what the data were showing (Bentler & Bonett, 1980). A potential issue with the chi-square value is that it can be influenced by sample size, where a larger sample size can produce statistically significant results when the same results would not be statistically significant with a smaller sample size. This was accounted for by the CFI.

The CFI measured the degree of fit for the chosen model along a continuum of possible models (Bentler, 1990). Results ranged from 0 to 1, with a CFI of .90 or greater representing an adequate fit between data and the chosen model (Hu & Bentler, 1999). The fourth measure of fit that was of interest to the current study is RMSEA. The RMSEA compared the model with the number of estimated parameters, searching for the model with an optimal number of parameters. This means that the RMSEA used the model that incorporated a minimal set of parameters while still giving a full picture of the variables in question. This eliminated superfluous parameters and gave a more focused picture of results based on the most efficient use of parameters in the study. A RMSEA score less than .07 indicated a good model fit (Hooper, Coughlan, & Mullen, 2008).

Finally, I evaluated the paths within the model and the significance of the indirect paths. Specifically, I examined whether the marital quality of the parents predicted the depressive symptoms of adolescents via the mediators of warmth and hostility demonstrated in the parent-adolescent relationships. In order to understand the indirect paths through the mediators of the parent-adolescent relationships, I employed the Sobel method (Sobel, 1982; Baron & Kenny, 1986). This method utilized the unstandardized coefficients and the standard errors of the data to examine the relationship between the variables. According to this method, significant mediation was said to have occurred if the p -value associated with the Sobel test was below .05.

CHAPTER FOUR

RESULTS

Preliminary Analyses

The relationship between marital quality, the parent-adolescent relationship, and adolescent depressive symptoms was examined. Correlations were run in order to understand the magnitude of the relationships between the variables. See Appendix D for the complete correlation table. Results indicated that there was not a significant relationship between the active duty father's marital quality and the adolescent depressive symptoms ($r = -.048, p = .466$), but there was a significant, inverse relationship between the mother's marital quality and the adolescent depressive symptoms ($r = -.163, p = .014$), such that higher levels of mother marital quality was associated with lower levels of adolescent depressive symptoms. There was also a positive, significant relationship between the marital quality of the active duty father and the marital quality of the mother ($r = .513, p = .001$).

The correlations indicated that, although there was not a significant relationship between the father's marital quality and the warmth he displayed towards his adolescent ($r = .021, p = .754$), there was a significant relationship between the mother's marital quality and the warmth she displayed towards her adolescent ($r = .261, p = .001$). Results indicated that there was a significant, inverse relationship between the father's marital quality and the hostility he displayed towards his adolescent ($r = -.174, p = .009$). Similarly, there was a significant, inverse relationship between the mother's marital quality and the hostility she displayed towards her adolescent ($r = -.200, p = .005$).

The level of warmth that the father demonstrated toward his adolescent had a significant, inverse relationship to the adolescent's depressive symptoms ($r = -.358, p = .001$). Similarly, the

level of warmth the mother demonstrated toward her adolescent had a significant, inverse relationship to the adolescent's depressive symptoms ($r = -.418, p = .001$). The correlation analysis also revealed that there was a positive, significant relationship between the hostility shown to the adolescent by the father and the adolescent's depressive symptoms ($r = .416, p = .001$), as well as a significant relationship between the hostility shown to the adolescent by the mother and the adolescent's depressive symptoms ($r = .263, p = .001$).

Potential control variables were identified based on the extant literature, including adolescent gender, active duty father's rank, mother-child biological relationship, and adolescent age. Based on the results of the correlation analysis, adolescent age was not significantly related to any of the variables of interest in this study, so it was not included as a control variable. However, gender of the adolescent was significantly related to the marital quality of the mother, such that having a female adolescent was associated with lower reported marital quality by the mother ($r = -.179, p = .007$). The correlation analysis also indicated that the warmth that the mother displayed in the mother-adolescent relationship was related to the gender of the adolescent, such that higher levels of warmth were associated with the mother-son relationship ($r = -.182, p = .009$). Additionally, the correlations demonstrated that depression was related to gender of the adolescent, such that higher levels of depression were associated with the adolescent being female ($r = .196, p = .003$). Rank was significantly related to the hostility that the mother displayed in the mother-adolescent relationship, such that higher levels of hostility were associated with the active duty father being enlisted instead of an officer ($r = -.171, p = .015$).

Mother-child biological relationship was significantly associated with the warmth that the active duty father displayed in the father-adolescent relationship, such that the mother being the

biological mother of the adolescent was associated with higher levels of warmth by the father ($r = .163, p = .015$). Mother-child biological relationship was also significantly related to the hostility that the mother displayed in the mother-adolescent relationship, such that the mother being the biological mother of the adolescent was associated with lower levels of hostility by the mother ($r = -.164, p = .020$). Given the importance of these variables in the literature and within the sample, each of these significant associations were accounted for in the model and denoted as control variables.

In order to investigate the relationship between the variables and understand the potential for multicollinearity, a collinearity diagnosis was conducted. Multicollinearity was assessed between all predictor variables with a correlation greater than .40. The VIF for the variables ranged from 1.045 and 1.949. Accordingly, the existence multicollinearity between predictor variables could be confidently ruled out.

Regression Analysis

To examine hypothesis one, a multiple regression analysis was conducted. The results demonstrated that while the relationship between marital quality and adolescent depressive symptoms was significant for the mother's report of marital quality ($\beta = -.163; p = .014$), it was not significant for the father's report of marital quality ($\beta = -.048; p = .466$). Parental marital quality accounted for a small percentage of the variance in adolescent depressive symptoms ($R^2 = .027$, or 2.7% variance).

Path Analysis

To assess hypotheses two through seven, a path model was fitted to the data controlling for gender, rank, and mother-child biological relationship as previously described. Model fit was acceptable ($\chi^2 = 44.766, p = .006; \chi^2/df = 1.865; CFI = .945; RMSEA = .062$). The path model

can be found in Appendix E. The direct paths between the variables within the model were then examined to understand the strength and direction of the relationships. Because path models account for all other variables within the model, some of the relationships between variables were different from the correlational analyses. Specific hypotheses are described below. All hypotheses are described within the context of the model, thus they account for all other variables within the model.

Hypothesis two was partially supported. There was not a significant relationship between the marital quality of the father and the warmth he displayed in the parent-adolescent relationship ($\beta = .024, p = .604$), but there was a positive, significant relationship between the marital quality of the mother and the warmth she displayed in the parent-adolescent relationship ($\beta = .197, p = .003$).

Hypothesis three was fully supported when investigated within the model. There was a significant, inverse relationship between the marital quality of the father and the hostility that he displayed in the parent-adolescent relationship ($\beta = -.173, p = .007$). Similarly, there was a significant, inverse relationship between the marital quality of the mother and the hostility that she displayed in the parent-adolescent relationship ($\beta = -.169, p = .011$).

Hypothesis four was partially supported. There was not a significant relationship between the warmth displayed by the active duty father in the parent-adolescent relationship and the level of depressive symptoms reported by the adolescent ($\beta = -.058, p = .448$), but there was a significant, inverse relationship between the warmth displayed by the mother in the parent-adolescent relationship and adolescent depressive symptoms ($\beta = -.286, p = .001$).

Hypothesis five was partially supported, as well. There was evidence of a significant, positive relationship between the hostility shown by the active duty father in the parent-

adolescent relationship and the depressive symptoms displayed by the adolescent ($\beta = .315, p = .001$), but the relationship was not significant for the relationship between the hostility shown by the mother in the parent-adolescent relationship and adolescent depressive symptoms ($\beta = -.042, p = .572$).

Mediation Analysis

The Sobel method was used to test the potential mediating effects of warmth and hostility within the parent-adolescent relationship on the relationship between marital quality and adolescent depressive symptoms. After investigating the unstandardized coefficients and standard errors of the independent variable (marital quality), dependent variable (depressive symptoms), and mediator for hypothesis six (warmth in the parent-adolescent relationship), the hypothesis was partially supported. The warmth that the mother displayed in the mother-adolescent relationship was a significant mediator between the independent and dependent variable ($z = -3.19, p = .001$). The mediating relationship was not significant for the father-adolescent relationship ($z = -.37, p = .71$); this makes sense, given the path between father marital quality and father-adolescent warmth was non-significant as was the path between father-adolescent warmth and adolescent depressive symptoms.

Another Sobel test was conducted to examine the possible mediating effect of hostility within the parent-adolescent relationship. The Sobel test indicated that the hostility displayed by the father in the father-adolescent relationship significantly mediated the relationship between marital quality and adolescent depressive symptoms ($z = -2.44, p = .01$). A significant mediating effect was also found for the hostility that the mother displayed in the mother-adolescent relationship as it mediated the relationship between mother marital quality and adolescent depressive symptoms ($z = -2.158, p = .03$). Hypothesis seven was fully supported.

CHAPTER FIVE

DISCUSSION

The current study found that, in this sample of military families, the marital quality of active duty fathers and their spouses was indirectly related to the depressive symptoms that their adolescents display. This relationship was mediated through the warmth and hostility shown in the parent-adolescent relationship. Although many expected relationships were present, there were also notable unexpected results, as well.

Based on previous research, it was expected that there would be an inverse relationship between the marital quality of both parents and the depressive symptoms displayed by the adolescent, such that higher levels of marital quality reported would be related to lower levels of adolescent depressive symptoms. Yet, within the theory-based path model, neither the marital quality of the active duty father nor the mother had a significant relationship on adolescent depressive symptoms. Although others have directly linked marital quality to important mental health outcomes for children within the home (Cui & Conger, 2008; Du Rocher Schudlich & Cummings, 2007; Fishman & Meyers, 2000; Gerard et al., 2006; Kaczynski, Lindahl, & Malik, 2006; Low & Stocker, 2005; Schoppe-Sullivan et al., 2007; Shek, 2000), the primary expectation for the current study was that the relationship quality experienced within the marital subsystem would spill over into the parent-adolescent subsystem, such that warm and/or hostile parent-adolescent interactions would then predict adolescent mental health.

Similar to past studies (Bradford et al., 2008; Doyle & Markiewicz, 2005; Gerard et al., 2006), parent-adolescent interactions mediated the path between marital quality and adolescent depressive symptoms, but the linking mechanism differed by parent. For active duty fathers, poor marital quality was associated with more hostility demonstrated within the parent-

adolescent relationship, and higher levels of father hostility were linked to poorer adolescent mental health. For mothers, warmth served as the primary linking mechanism. More specifically, better marital quality was associated with higher levels of warmth displayed in the mother-adolescent relationship, and this, in turn, was linked to lower levels of depressive symptomology.

This provides support for the argument that there is spillover between the marital relationship, parent-adolescent relationship, and child outcomes in military families but the pathways differed by parent. Instead of the marital quality directly influencing the adolescent depressive symptoms, the relationship manifested in a way that was indirect, through the parent-adolescent relationship. This indicated that the parental marital quality in these families influences the way that the parents interact with their adolescents, which influences the depressive symptoms demonstrated by their adolescents display.

There was a significant relationship between the mother's marital quality and the warmth that she displayed towards her adolescent, where higher levels of marital quality reported were associated with higher levels of warmth displayed in the parent-adolescent relationship. The relationship was not significant for the active duty father. This relationship was also identified in a few other previous studies (Fauchier & Margolin, 2004; Fishman & Meyers, 2000). In those studies, it was found that the marital quality reported was more influential on the mother-adolescent relationship (particularly in parental involvement) than the father-adolescent relationship. In the current study, this finding may potentially be explained by the fact that mothers were all non-military parents, often referred to in the military literature as the "at home caretaker," and the fathers were active duty military members. This may indicate that the mother-adolescent relationship has had more time to develop and be influenced by the maternal

marital quality than the father due to the time spent with the adolescent when the father was deployed or on temporary duty assignments. Specifically, the finding that greater marital quality was linked to a warmer mother-adolescent relationship supports findings from previous studies. For instance, Bonds and Gondoli (2007) found that higher marital adjustment led to higher levels of maternal warmth in her relationship with her adolescent because she felt supported as a wife and mother. Additionally, Brody, Moore, and Glei (1994) conducted a longitudinal study on marital quality, parental warmth, and adolescent involvement on family decision making and discovered that higher marital quality in which the mother felt heard and supported was associated with a warmer and more supportive relationship between the mothers and adolescents.

Although this study did not specifically investigate parental mental health, it can be argued that marital quality and mental health for parents are highly correlated. The importance of the mental health of the at-home parent and the parent-adolescent relationship has been shown to be important for adolescent outcomes. For instance, Gunlicks and Weissman (2008) conducted a study on the mother-adolescent relationship and found that maternal depression significantly influenced child psychopathology. Additionally, Leinonen, Solantaus, and Punamaki (2003) found that maternal mental health compromised the mother's parenting ability and influenced adolescent adjustment.

That may also explain why the relationship between the warmth displayed by the parent in the parent-adolescent relationship and adolescent depressive symptoms was significant for the mother-adolescent relationship, but not for the father-adolescent relationship. Again, it would appear that warmth is more salient in the relationship with the mother than with the father and may be due to the mother being the consistent, at-home caretaker for the adolescent.

In contrast, there was a significant, inverse relationship between both parents' level of marital quality and the hostility they displayed towards their children. Viewing these results using the spillover hypothesis, it was not surprising that the negative feelings in the parental marital relationship manifested in the hostility that the parents displayed towards their children. Marriage is a very salient relationship in the family unit, and when that relationship is experiencing difficulties, it would be understandable if the negative interactions persisted into the parent-adolescent relationship. This aligns with results from Low and Stocker (2005), who found that marital hostility was related to parental hostility towards their adolescents.

The hostility displayed to the adolescent by the fathers, in turn, influenced the adolescents' depressive symptoms. This supports the findings from studies such as Bradford and colleagues (2008), Low and Stocker (2005), and Doyle and Markiewicz (2005), in which the parental hostility and conflict influenced adolescent outcomes. The same is not true for the mother-adolescent relationship in this study. Again, this could be due to the mother being the at-home caretaker and the adolescent having more interactions with her. The adolescent may have a stronger chance of internalizing the hostility from his or her father because of the fewer interactions he or she has with him.

As mentioned in the literature review, many studies have differed on their use of reporters: many using the parent, child, or a combination of the two. This study utilized various reporters for the variables of interest. The researchers that collected the original data were intentional about using reporters that could give clear, first-hand answers for the questions in the survey. The mother and father reported separately on their marital quality, allowing me to understand the differences and similarities between the parents and how that might spill over into their relationships with their adolescent children. The adolescents were the sole reporters on the

warmth and hostility shown by their parents in the parent-adolescent relationship because they were on the receiving end of those behaviors. The mother or father may have been projecting certain warm or hostile feelings and actions onto the adolescent without being conscious of it, but the adolescents could recall their relationship with their parents – as well as certain instances in which they felt cared for or not – in a way in which the parents may not have been able to. Finally, the adolescents reported on their levels of depressive symptoms. This was decided because the adolescent could speak to the internal feelings and emotions that may not have been visible or apparent to outside sources. The adolescents were the only ones who could give true pictures of their levels of depression. Therefore, the reporters matched the research questions and aims for this study in order to give a precise, clear reporting of the constructs being measured.

Practical Applications

Findings from the current study have important implications for service providers and researchers. Clinicians can use this study to inform their work with military families in the future. Understanding the mechanisms of warmth and hostility in the parent-adolescent relationship and how those two aspects of the relationship manifest differently for fathers and mothers in an active duty family can influence the approach and focus of work with families. It is important for clinicians to know the extent to which the inter-family relationships influence each other in order to best support their clients. There are salient factors that affect the military family aside from the specific non-normative stressors such as deployment, forced separation, and relocation, and it is imperative for them to be seen as a family unit in a comprehensive way in order to truly help and affect these families in the future. Clinicians who are already working with military families can use the spillover hypothesis and family systems theory to further their understanding of the relationships within the family. Employing these theories may allow them

to provide a context to the families they are working with for why the family unit, as opposed to strictly the individual, is important to nurture and support. The focus can shift from treating the active duty individual to treating the family holistically.

Additionally, family life educators can use the results of this study to continue to provide support for a healthy and well-functioning family. This study further provides evidence that the family systems perspective is an important lens through which to view the family, and family life educators can continue to use this view while focusing their lessons of communication, decision-making, and inter-personal relationships within the military family. It can inform their curriculum to include the importance of the marital relationship and its influence on the other relationships and individual outcomes in the family. They can inform parents about the influence that their actions have in both the marital and parent-adolescent relationship, and foster healthy connections between family members.

Finally, military policy can be affected by this study. Since September 11, 2001, there has been a push for the government to support and supply resources to active duty military personnel, veterans, and their families. A notable policy that was put into place by President Obama is called Strengthening our Military Families (Obama, 2011) in which the civil rights of service members are protected, as well as mentoring services for children in military families are provided. A section of this initiative is called Strengthening Military Families and Veterans and is meant to support at-home spouses when military members are deployed, as well as provide support for drug and alcohol addiction for active duty members. Although these policies are beginning to recognize the importance of the active duty member as well as other members of the family, this study can inform future policy to provide more support for the marital and family

unit as one. Again, family systems perspective and spillover hypothesis can inform future policies in order to provide adequate support to military personnel and their families.

Limitations

A few limitations must be noted when interpreting these findings and considering future work. First, this study was cross-sectional in nature, so it was not possible to assess causal relationships between variables. Some suggest that mediation cannot be reported in a cross-sectional study because it takes time to understand the developing relationship between the variables (Maxwell & Cole, 2007). Although causal relationships cannot be determined, this study indicated important foundational relationships that can be expanded upon in future research. Second, this study focused strictly on active duty military families from a large Army installation in the continental United States. This can make it difficult to generalize to groups outside of this cohort, as well as the wider population because of the specific nature of the group.

Third, this study used all male active duty member participants. There were very few female active duty members in this sample, and the decision to use all male participants was to control for confounding variables. However, this makes it difficult to understand if the results are due to the participants being male, they are in the military, or a combination of both. For instance, the warmth and hostility that the active duty member showed his adolescent could be influenced by his gender, his role in the military, or a combination of the two. It would be prudent to conduct a study using female active duty members, as well as a combination of genders, to understand the influence that gender has on the active duty members for the measure variables.

Finally, this study focused solely on depressive symptoms in adolescents as the outcome. It is important to understand the influences on adolescent depressive symptoms and, as outlined

above, it has become a large issue in the adolescent community. However, there are many other outcomes that can be investigated, such as internalizing and externalizing behaviors, academic success, and other health outcomes. It is important to understand a large number of outcomes for adolescents in order to fully support them and their development.

Future Directions

When designing future studies, researchers are encouraged to address and account for the limitations outlined above. These studies can include longitudinal research that follows families over time and tracks the long-term effects of familial relationships. It may be beneficial to do a comparison study with different populations using these variables to understand the differences and similarities between the groups of interest, as well as investigating the wider population using the same variables to understand the influence on families at large. Future research can also focus on a wider range of adolescent outcomes to have a holistic picture of family functioning.

This study contributes to military research by expanding the knowledge on family functioning. While there are a growing number of studies on the non-normative stressors of deployment, relocation, and forced separation, this study treats these military families as a unit of people who interact and influence each other. It is understood that this particular group of people endure stressors that are unique and different than other families, but this study was intended to understand the military family in an everyday setting, removed from the context of those stressors mentioned above. It strives to lay a foundation for other researchers to investigate and understand the interrelatedness and influence of family members on each other, as well as on the family unit. In order to fully understand this population, it may be beneficial for military research

to move in the direction of understanding and improving the lives of the every day functioning of the family instead of the reactions or resiliency displayed after a traumatic event.

This study can also be translated to other populations that are experiencing non-normative stressors. Military families have nuances that are uniquely theirs. Being in the military, or identifying as part of a military family, brings hardships, successes, duty, and honor that only military families understand. While that is the case, there are many other families that experience difficult or unique stressors that can apply the lessons learned about military families to their own families. These families can include immigrant families, seasonal workers who are forced to be away from their families, LGBTQ families, and families with different structures. It is important to understand the similarities and differences between these groups in order to provide the best support possible for these families in the future.

Future studies can also investigate these variables in regard to the population at large. It would be helpful to understand the way that a diverse, randomly selected group of families from different backgrounds and cultures interacts and influences each other using these variables. It would highlight the differences and similarities between military and civilian families that could inform research and clinical action taken in the future.

APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL

The Florida State University
Office of the Vice President For Research Human Subjects Committee Tallahassee, Florida
32306-2742

(850) 644-8673 · FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 11/19/2015

To: Samantha Howard

Address: [REDACTED]

Dept.: FAMILY & CHILD SCIENCE

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
Marital Satisfaction, Parent-Child Relations, and Child Outcomes in Military Families

The application that you submitted to this office in regard to the use of human subjects in the research proposal referenced above has been reviewed by the Human Subjects Committee at its meeting on 11/18/2015. Your project was approved by the Committee.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 11/16/2016 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is FWA00000168/IRB number IRB00000446.

Cc: Mallory Lucier-Greer, Advisor
HSC No. 2015.16650

APPENDIX B

DEMOGRAPHIC INFORMATION

Table

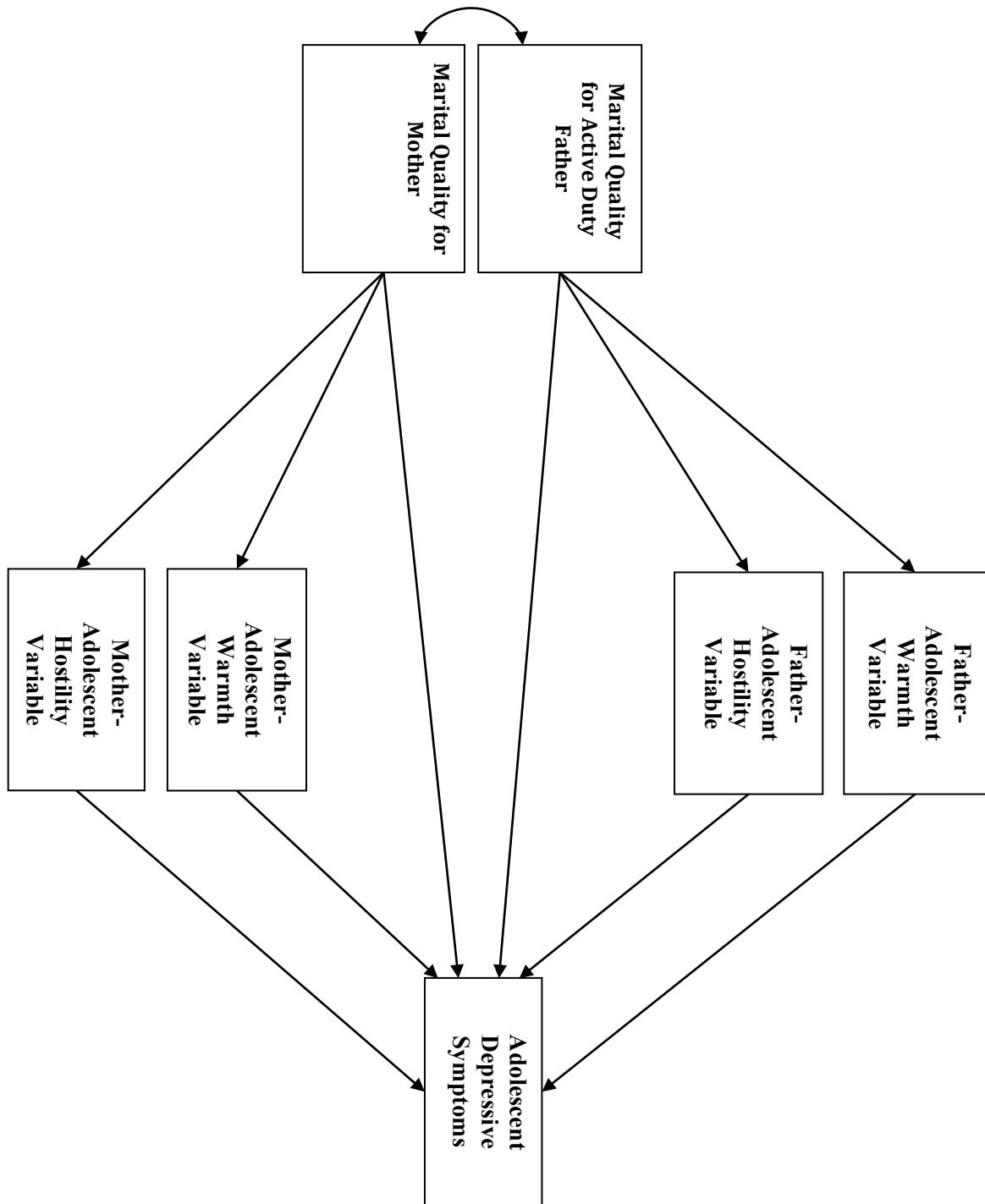
Demographic information for participants

Variable	0	1
Gender (Female)	109	120
Rank (Officer)	204	24
Biological Relationship (Mother)	11	217
Age	138	91

Note. The variables are dichotomous: gender (0 = Male, 1 = Female adolescent), rank (0 = Enlisted parent, 1 = Officer parent), mother-child biological relationship (0 = non-biological mother, 1 = biological mother), and age (0 = 11 to 14 years old, 1= 15 to 18 years old).

APPENDIX C

CONCEPTUAL MODEL



Conceptual Model: Exploring the relationship between parental marital quality, the parent-adolescent relationship, and adolescent depressive symptoms.

APPENDIX D **CORRELATION TABLE**

Table

Correlations between study variables

	1	2	3	4	5	6	7	8	9
1. Marital Quality for AD Father	1								
2. Marital Quality for Mother	.513**	1							
3. Father-Adolescent Warmth Variable	.021	.177**	1						
4. Father-Adolescent Hostility Variable	-.174**	-.164*	-.583**	1					
5. Mother-Adolescent Warmth Variable	.084	.261**	.427**	-.358**	1				
6. Mother-Adolescent Hostility Variable	-.089	-.200**	-.253**	.407**	-.528**	1			
7. Adolescent Depressive Symptoms	-.048	-.163*	-.358**	.416**	-.418**	.263**	1		
8. Gender (Female)	-.087	-.179**	-.090	.124	-.182**	.058	.196**	1	
9. Rank (Officer)	.060	.118	.001	-.035	.050	-.171*	-.112	.014	1
10. Biological Relationship (Mother)	-.032	-.008	.163*	-.041	.065	-.164*	-.048	.030	.078

Note. The following are dichotomous variables: gender (0 = Male, 1 = Female adolescent), rank (0 = Enlisted parent, 1 = Officer parent), and mother-child biological relationship (0 = non-biological mother, 1 = biological mother). * $p < .05$, ** $p < .01$, *** $p < .001$

APPENDIX E

PATH MODEL

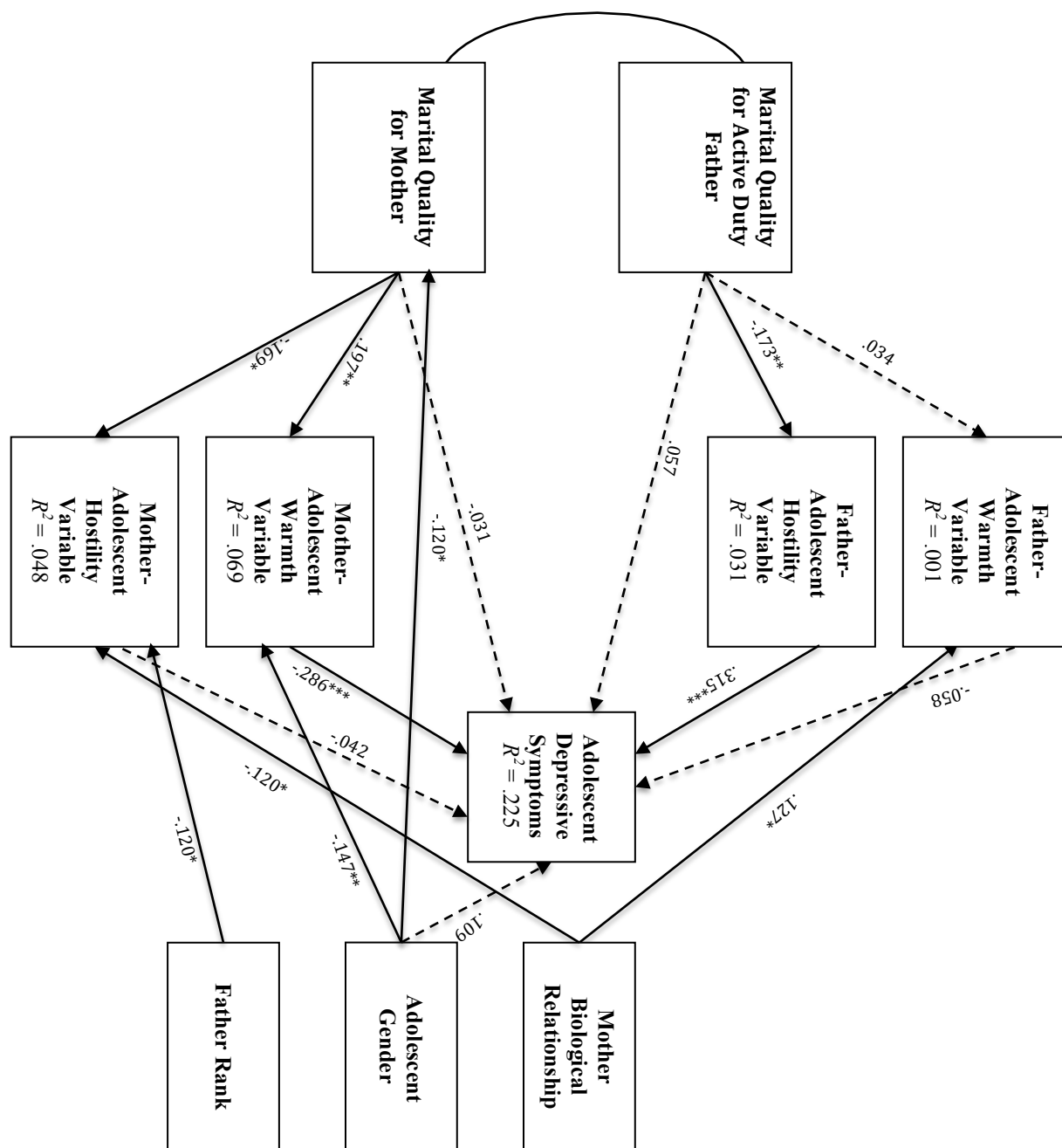


Figure. Path model depicting the relationship between parental marital quality, the parent-adolescent relationship, and adolescent depressive symptoms. Coefficients are standardized. Non-significant paths are dashed. Model fit: $\chi^2/df = 2.513$, CFI = .939, RMSEA = .081. * $p < .05$, ** $p < .01$, *** $p < .001$

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BIOGRAPHICAL SKETCH

Samantha Howard is currently a student at Florida State University. She expects to graduate in August 2016 with a Masters of Science in Family and Child Sciences. Due to her academic achievements during her time in graduate school, Samantha is a member of two organizations – Golden Key Honor Society and Kappa Omicron Nu Human Sciences Honor Society. She will be graduating with a 4.0 grade point average.

While pursuing her graduate degree, Samantha worked full-time as a College Life Coach at Florida State University. Within this context, she assisted new students in the transition from high school to college, as well as offered connections and resources to make their college experience as fulfilling as possible. She also served as a Garnet and Gold Scholar Society advisor, where she has the opportunity to mentor and guide high-achieving students in the areas of research, internship, leadership, service, and international studies.

Samantha plans to continue her education at Florida State University in the fall by starting the Family Relations doctoral program. Additionally, she will be presenting the findings from this study at the National Council on Family Relations national conference in Minneapolis, Minnesota in November 2016. She looks forward to the challenges and opportunities that the future holds.